

Secoroc Rock Drilling Tools

Secoroc Oilfield PDC drill bits



Sustainable Productivity



PDC drill bits

– shear rock with a
continuous scraping
motion

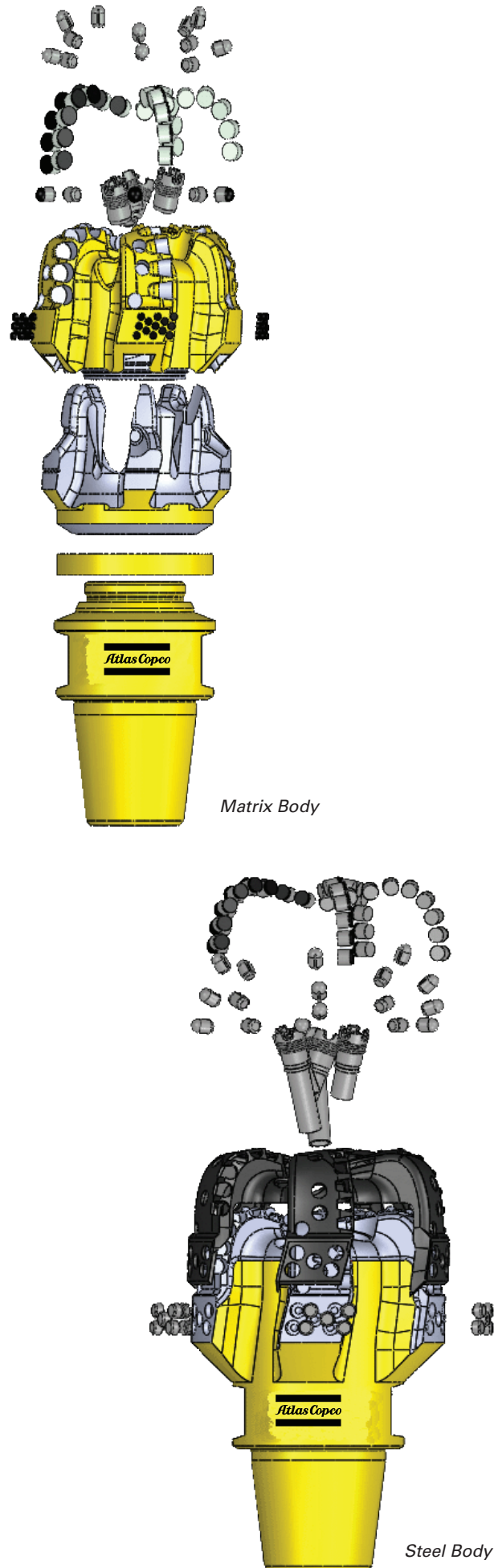
Atlas Copco Secoroc's PDC drill bits provide a drilling tool that uses polycrystalline diamond compact (PDC) cutters to shear rock with a continuous scraping motion.

These cutters are synthetic diamond disks about 1/8 inch thick and about 1/2 to 3/4 inch in diameter.

These products are offered in both a steel body and matrix body construction.

Atlas Copco Secoroc PDC offerings include drill bits ranging in diameter from 7-7/8 in (200 mm) to 36 in (914 mm) in the steel body construction and 5-7/8 in (149 mm) to 17-1/2 in (445 mm) in the matrix body construction.

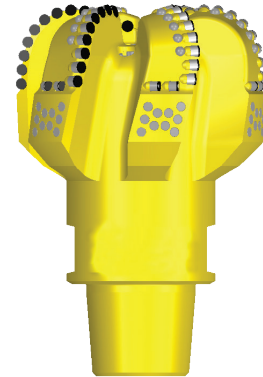
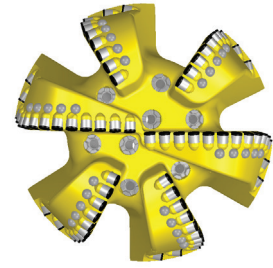
Several different product lines are offered providing a highly efficient, cost effective solution for most drilling applications.



Secoroc Steel Body PDC Drill Bits

Design Features

- 3D designed 4140 alloy steel body CNC machined for maximum blade and body strength.
- Tungsten Carbide hardfacing in critical areas for increased erosion and abrasion resistance.
- Tungsten Carbide Insert (TCI) enhanced gage pads for increased gage protection.
- Parabolic profile is optimized for blade count, cutter quantity and bit stability.
- Force-Balanced PDC cutter locations minimize bit whirl and drill a precise round hole.
- Asymmetric blade design reduces drilling harmonics.
- Blade protection elements are located strategically to maximize bit life. Standard bits have back-up TCI bumpers while "X" bits have back-up PDC cutters.



Typical Oilfield Steel Body Product Offering

Size		API Pin Connection	Standard PDC Cutter Size	Optional PDC Cutter Size	Standard Blade Count	Optional Blade Count
Oilfield Matrix Body						
in	mm					
7-7/8	200	4-1/2" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7, 8
8-1/2	216	4-1/2" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7, 8
8-3/4	222	4-1/2" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7, 8
9-7/8	251	6-5/8" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7, 8
10-5/8	270	6-5/8" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7, 8
11	279	6-5/8" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7, 8
12-1/4	311	6-5/8" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7, 8
13-1/2	343	6-5/8" Reg	19 mm	13 mm, 19 mm	6, 7	5, 8

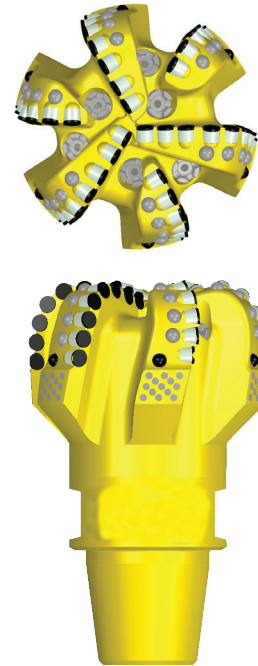




Secoroc Matrix Body PDC Drill Bits

Design Features

- Cast Infiltrated Tungsten Carbide matrix shell for maximum erosion and abrasion resistance.
- 3D designed and CNC machined internal steel blank for maximum blade and body strength.
- Thermally Stable Polycrystalline (TSP) Diamond enhanced gage pads for maximum gage protection.
- Parabolic profile is optimized for blade count, cutter quantity and bit stability.
- Force-balanced PDC cutter locations minimize bit whirl and drill a precise round hole.
- Asymmetric blade design reduces drilling harmonics.
- Blade protection elements are located strategically to maximize bit life. Standard bits have back-up tungsten carbide bumpers while "X" bits have back-up PDC cutters.



Product Offering Oilfied Matrix Body

Size		API Pin Connection	Standard PDC Cutter Size	Optional PDC Cutter Sizes	Standard Blade Count	Optional Blade Count
in	mm					
5-7/8	149	3-1/2" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7 8
6	152	3-1/2" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7 8
6-1/8	156	3-1/2" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7 8
6-1/4	159	3-1/2" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7 8
6-1/2	165	3-1/2" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7 8
6-3/4	171	3-1/2" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7 8
7-7/8	200	4-1/2" Reg	16 mm	13 mm, 19 mm	4, 5, 6	7, 8
8-1/2	216	4-1/2" Reg	16 mm	13 mm, 19 mm	4, 5, 6	7, 8
8-3/4	222	4-1/2" Reg	16 mm	13 mm, 19 mm	4, 5, 6	7, 8
9-7/8	251	6-5/8" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7 8
10-5/8	270	6-5/8" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7 8
11	279	6-5/8" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7 8
12-1/4	311	6-5/8" Reg	16 mm	13 mm, 19 mm	5, 6	4, 7 8
13-1/2	343	6-5/8" Reg	19 mm	16 mm	6, 7	5, 8
13-3/4	349	6-5/8" Reg	19 mm	16 mm	6, 7	5, 8
14-3/4	375	6-5/8" Reg	19 mm	16 mm	6, 7	5, 8
15-1/2	394	7-5/8" Reg	19 mm	16 mm	7, 8	6, 9
16	406	7-5/8" Reg	19 mm	16 mm	7, 8	6, 9
17-1/2	445	7-5/8" Reg	19 mm	16 mm	7, 8	6, 9

Oilfield PDC drill bit nomenclature

M	6	16	X	U
M = Matrix Body	Blade Count	Primary PDC size (mm)	Back-up PDC cutters	Up-Drill PDC cutters
S = Steel Body				

Nozzle systems

Nozzles are available in two sizes:



- LOP (Large One Piece)
- sizes 9–20

- MOP (Medium One Piece)
- sizes 10–16

Total Flow Area (TFA) Chart

Nozzle Size	Nozzle Qty / TFA (in ²)											
	1	2	3	4	5	6	7	8	9	10	11	12
9	0.06	0.12	0.19	0.25	0.31	0.37	0.43	0.50	0.56	0.62	0.68	0.75
10	0.08	0.15	0.23	0.31	0.38	0.46	0.54	0.61	0.69	0.77	0.84	0.92
11	0.09	0.19	0.28	0.37	0.46	0.56	0.65	0.74	0.84	0.93	1.02	1.11
12	0.11	0.22	0.33	0.44	0.55	0.66	0.77	0.88	0.99	1.10	1.21	1.33
13	0.13	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.17	1.30	1.43	1.56
14	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.65	1.80
15	0.17	0.35	0.52	0.69	0.86	1.04	1.21	1.38	1.55	1.73	1.90	2.07
16	0.20	0.39	0.59	0.79	0.98	1.18	1.37	1.57	1.77	1.96	2.16	2.36
17	0.22	0.44	0.66	0.89	1.11	1.33	1.55	1.77	1.99	2.22	2.44	2.66
18	0.25	0.50	0.75	0.99	1.24	1.49	1.74	1.99	2.24	2.49	2.73	2.98
19	0.28	0.55	0.83	1.11	1.38	1.66	1.94	2.22	2.49	2.77	3.05	3.32
20	0.31	0.61	0.92	1.23	1.53	1.84	2.15	2.45	2.76	3.07	3.37	3.68







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